Please find below my reply to the Office Communication mailed on January 31, 2008 on application number 10/710,519

Claim Objections

Hereby I refer to Par. 5 of the Detailed Action

Claim is amended as required.

Double Patenting

Hereby I refer to Pars. 6-11 of the Detailed Action

I do oppose the double patenting raised in Pars. 6-11 of the detailed action.

As we clearly gave in the Pars 5-11 of the Specification of the instant application, the instant application has clear advantages in the security of the data transmission. Security related issues are not covered at all in the co-pending application 10/709,969.

Moreover, the instant application covers also data-broadcasting in networks, visualized on Figures 1 and 2. No such applications are described in the co-pending application at all.

Data transmission and data storage are two distinct but somewhat related fields of engineering. Claim 1 (c) of the co-pending application 10/709,969 emphasizes that large amount of data can be stored in small storage; Claim 1 (c) of the instant application stresses that large amount of data can be transmitted simultaneously in t parallel channels.

The further claims and the specification make clear that the parallel data transmission here is important.

The co-pending application may imply, however, that the small amount of data can be transmitted, but the parallel transmission and the security-related applications make the instant application unique.

Therefore the instant application covers absolutely non-obvious utilizations of the technique, also described in another context in the co-pending application.

Claim Rejections – 35 USC § 103

Hereby I refer to Pars. 12-13 of the Detailed Action

Claim 5 is amended as required: the necessary limitations are inserted.

Opposing claim rejections – 35 USC § 103

Hereby I refer to Pars. 14-16 of the Detailed Action

I hereby oppose the rejection of claims 1, 2 and 5 under 35 U.S.C. 103(a) over Liu (US Patent Application Publication 2003/0186650) and further in view of Kutin (NPL "Constructing Large Set Systems with Given Intersection Sizes Modulo Composite Numbers").

First, Liu's patent application are not related with my instant application at all, since Liu's invention

- Describes resource allocation in a multiple-antenna system. It contains resource allocation methods in a completely continuous setting. My instant invention describes a fully discreet, digital method for solving an unrelated problem with unrelated tools.
- Certainly, every electrical engineering text contains words like: *"signal vectors and propagation coefficients"*, *"transmission over channels"* and frequently refers to *matrices*. If USPTO rejected all applications containing these words, and not investigating the *content* of the disclosure, no electrical or electronic engineering inventions could have been patented.
- The *matrix of propagation coefficients* are completely unrelated to my instant invention. They describe propagation of continuous electric signal transmission using radio frequencies. Our invention has nothing to do with antennae, or sending power allocation in broadcasting. It also contain matrices, manipulated and applied certain ways. Matrices

are just numbers stored in a certain way. I think USPTO would not like to reject applications containing numbers on the ground that other applications already contain some numbers.
- Our method is digital, Liu's invention in not digital.
- Regarding pars 50-53 of Liu's specification, it describes the classical Singular Value Decomposition (SVD) of matrices. Our instant invention has nothing to do with Singular Value Decomposition of matrices. Moreover, using computations modulo composite moduli (e.g., 6), typically no SVD exists (moreover, one cannot even define division modulo composite moduli).

Therefore no point in Liu's patent application is related to my instant application, it just contain the words: *matrix, coefficient, transmitters and transmission*. Hence I do oppose the rejection of Claims 1, 2 and 5 under 35 U.S.C. 103(a) over Liu (US Patent Application Publication 2003/0186650).

Second, Kutin's cited work is based on my previous – entirely mathematical papers – dealing with graphs and set systems (cited in Kutin's paper as references no. 9, 10 and 11). My instant application also deals with some mathematical phenomena close to those subjects. However, my previous mathematical works are not patentable, since they contain mathematical theorems. Similarly, Kutin's small improvement over my works are not patentable, since it contains mathematical theorems.

My present invention, however, discloses a completely new communication network architecture.

Clearly, Kutin's paper has nothing to do with data communication, networks or security. Kutin's work is a small improvement on my previous mathematical works, and it deals with set systems, Ramsey graphs and composite moduli (i.e., objects in pure mathematics), and has *nothing* common with networks and data transmission.

My instant invention uses polynomials over composite moduli to describe a certain network architecture.

Therefore I do oppose the rejection of Claims 1, 2 and 5 under 35 U.S.C. 103(a) in view of Kutin (NPL "Constructing Large Set Systems with Given Intersection Sizes Modulo Composite Numbers").

/Vince Grolmusz/